pcbriefs
Division of Computer Research and Technology
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# NIH Electronic Computer Store

## Shopping with a mouse click

*by Pat Winkler*

In case you hadn't noticed, most federal agencies now have a presence on the Internet in the form of a Web "home page." Put simply, a home page is something like an electronic billboard—but a whole lot better. Typical home pages include not only a variety of information, but also special areas (or hot spots) that are really links to other files—either documents or images—located on some other computer that provides related information. When you click on the hot spot, indicated by either underlined or colored text or a button or picture, your PC will attempt to connect to the other location and display the contents of the specified file. For instance, the NIH home page (**http://www.nih.gov/home.html**) contains links to home pages for most of the institutes, centers, and divisions at NIH.

Along with federal agencies, many commercial enterprises have scrambled to hoist their shingles as well. Today a PC user armed with a graphical browser can cruise the Web for research, recreation, and yes, even retail.

### A store is born

With the bridge between instant information and actual commerce in place, the NIH Office of Information Resource Management and the Office of Procurement have teamed up to provide employees at NIH and the Department of Health and Human Services with something truly incredible—an effortless way to shop for computer equipment online via the Web. Late last year a contract was awarded to 17 vendors to display their computer wares on their own home pages available to NIH via links on the OIRM home page (**http://www.nih.gov:80/od/oirm/**). The vendors' home pages, which collectively are called the NIH Electronic Computer Store, are online catalogs with prices, brief product descriptions, and model numbers of equipment available. Starting Jan. 3, employees at NIH and the Department of Health and Human Services could electronically shop for everything from the latest in desktop computers to office automation software. Under this multiple-award contract, vendors will provide a broad range of commercial off-the-shelf PC equipment, including laptop computers, software, peripherals, and operating system software, featuring name brands such as Apple, Compaq, Dell, and IBM.

Of the vendors awarded the Electronic Computer Store contract, seven are 8(a) companies, seven small businesses, and three large firms. The firms are listed in the screen shot on page 6.

### Breakfast at Tiffany's

For now, the Electronic Computer Store is little more than a high-tech

*(See **Store,** page 6)*

# PCB/DSB

## Gone but not forgotten

*by David C. Songco*

As personal computers appeared at NIH in the early 1980s, DCRT anticipated their unique requirements and support needs by forming first the Personal Workstation Office, then the Personal Computing Branch. As the definitions of personal computing expanded into networks of computers, the branch was changed and renamed the Distributed Systems Branch. This group established the Lead User Program, now known as the Computer Support Coordinators, sponsored BRMUG and The CURE, and established the NIH User Resource Centers in collaboration with the then NIH Training Center. PCB/DSB also developed and supported PUBnet, product information guides, and of course *PCBriefs*.

PCB and then DSB filled a unique niche, providing support and guidance for users of distributed computing, and the branch grew for 12 years along with the acceptance and proliferation of personal computers and local area networks. As their use became more widespread and the technology more

*(See **DSB,** page 6)*

HIGHLIGHTS:

# Backing up is hard to do

*by Pat Winkler*

There are lots of easy ways to lose valuable data stored on a computer. You can make a simple mistake and accidentally overwrite a good file with the wrong information. The result: your data is history. Or you could have an unexpected visit from a computer virus that deletes files. Obviously, you should take the necessary precautions to protect your data from the inevitable—data loss.

For most people, backing up data is a lot like exercise. We know we should do it, but—for a variety of reasons—we just don't.

## My dog ate it

Excuse #1: "I just can't seem to find the time..."

Reality: You can configure most systems to perform the backup automatically. You can even back up your system at night when you're asleep. If only sit-ups were as easy!

Excuse #2: "It's so slow and tedious. I'd rather watch snow melt."

Reality: Actually, if done on a regular basis, making backups can be very quick. And remember, there is no greater comfort than the sense of security that backed-up data provides.

Excuse #3: "I just can't seem to get motivated. Is this really part of *my* job?"

Reality: Often it takes a disaster before we understand the importance of backing up data regularly. In most instances, data that resides on file servers is backed up by your LAN administrator. Unfortunately, local data (the stuff you have on your hard disk) is rarely included. Your data is *your* responsibility.

Excuse #4: "I don't have a tape backup unit. My hard disk is 325MB. Are you telling me I will need 226 floppy disks?!"

Reality: Whoa! You certainly don't need to back up every byte on your hard disk. All the application software (Windows, Word, Excel, WordPerfect, etc.) you have installed occupies the majority of your disk space. You don't need to back any of that up. In case of emergency, you can always reinstall apps from the original disks. The only files that need to be regularly backed up are your data files—documents, memos, manuals, letters, spreadsheets. These files usually comprise a rather small portion of your total disk space.

## A method to the madness

There are three types of backups: full, incremental, and differential.

A **full** backup contains every file on whatever drive and/or directory you specify. Full backups are the safest route for protecting your data but take the most time and storage space. Depending on the amount of work you do on your computer, I recommend that you perform a full backup *at least* once a month—preferably once a week.

An **incremental** backup contains only the files that have changed since you performed the last full or incremental backup. Incremental backups are the fastest type of backup, ideally suited for everyday use.

A **differential** backup is similar to an incremental but unique in that it backs up all files that have changed since the last *full* backup (not since the last incremental).

The most effective backup strategy combines either a full/incremental *or* a full/differential backup. Either combination is good, but never mix incrementals and differentials. If you needed to restore from such a mix, it is unlikely that all your files will be there. The differences between a full/incremental and a full/differential

FULL/INCREMENTAL COMBINATION

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|
| Full backup all:<br>*.doc<br>*.xls | Incremental backup:<br>file_A.doc<br>file_B.doc | Incremental backup:<br>file_C.xls | Incremental backup:<br>file_D.doc<br>file_E.doc<br>file_F.doc | Incremental backup:<br>file_G.xls<br>file_H.xls |
| work on:<br>file_A.doc<br>file_B.doc | work on:<br>file_C.xls | work on:<br>file_D.doc<br>file_E.doc<br>file_F.doc | work on:<br>file_G.xls<br>file_H.xls | |

FULL/DIFFERENTIAL COMBINATION

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|
| Full backup all:<br>*.doc<br>*.xls | Differential backup:<br>file_A.doc<br>file_B.doc | Differential backup:<br>file_A.doc<br>file_B.doc<br>file_C.xls | Differential backup:<br>file_A.doc<br>file_B.doc<br>file_C.xls<br>file_D.xls<br>file_E.doc<br>file_F.doc | Differential backup:<br>file_A.doc<br>file_B.doc<br>file_C.xls<br>file_D.xls<br>file_E.doc<br>file_F.doc<br>file_G.xls<br>file_H.xls |
| work on:<br>file_A.doc<br>file_B.doc | work on:<br>file_C.xls | work on:<br>file_D.doc<br>file_E.doc<br>file_F.doc | work on:<br>file_G.xls<br>file_H.xls | |

backup are illustrated in the tables below.

In both scenarios, it is assumed that a full backup is performed every Monday morning. On the following weekdays, when using the full/incremental method (shown in the top table), only the files that have changed since the last full or incremental backup are backed up. Essentially, this means that your daily changes are saved in the incremental backups.

By using differential backups in combination with full backups (shown in the bottom table), all files that have changed since the last full backup will be saved on a daily basis. Obviously, the full/differential method will take more time and disk space to complete. There is one distinct advantage, however: When restoring files from backups, if you are using a full/incremental method, you will need the last full backup and every incremental backup that followed the full backup to restore all files. If you are using a full/differential method, you will need only the last full backup and the last differential to recover all your files.

***Backing up your data is your responsibility.***

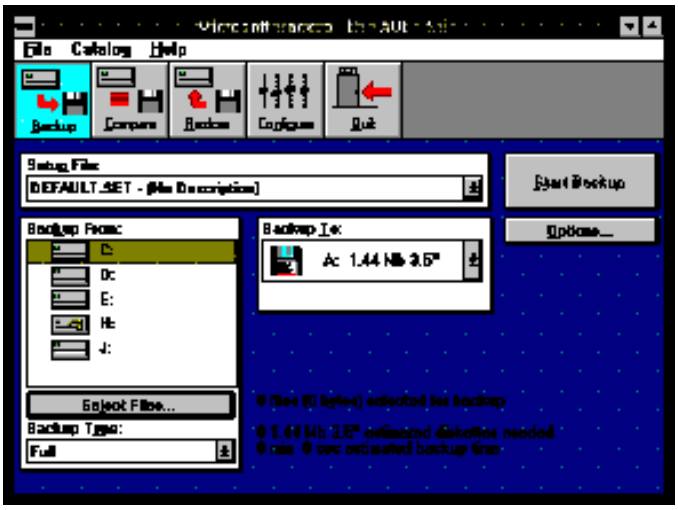
## Send in the hardware

There are several convenient hardware devices specifically designed to perform your backup chores. In the past, the backup device was an external unit that you connected to your PC. Most new systems today offer a tape unit as an installed option. They are internal to your PC, so you don't have to worry about compatibility or the hassle of trying to configure the beast. The technology is also vastly improved. Years ago, a VHS-sized tape held 80MB, while today's microcasettes can hold up to 8 gigabytes of data.

If you are in the market for a new PC, get an internal tape drive preinstalled. If you do not have access to a tape backup unit—my apologies. Backing up won't be as easy with floppy disks but is still doable—and certainly just as important.

## Software to the rescue

Tape backup units come with their own software. If you have to rely on good ol' floppies, there are several alternatives. Among them are Norton Backup for Windows, Central Point Backup, Fastback Plus, and Microsoft Backup. Although Microsoft Backup is not the best, it does have one thing going for it—it comes free with DOS 6 and Windows. So, if you have DOS 6 or greater, you have backup software and no excuses. Unfortunately, you cannot configure Microsoft's Backup to automatically back up at 4 in the morning. On the plus side, the interface is relatively easy to use.

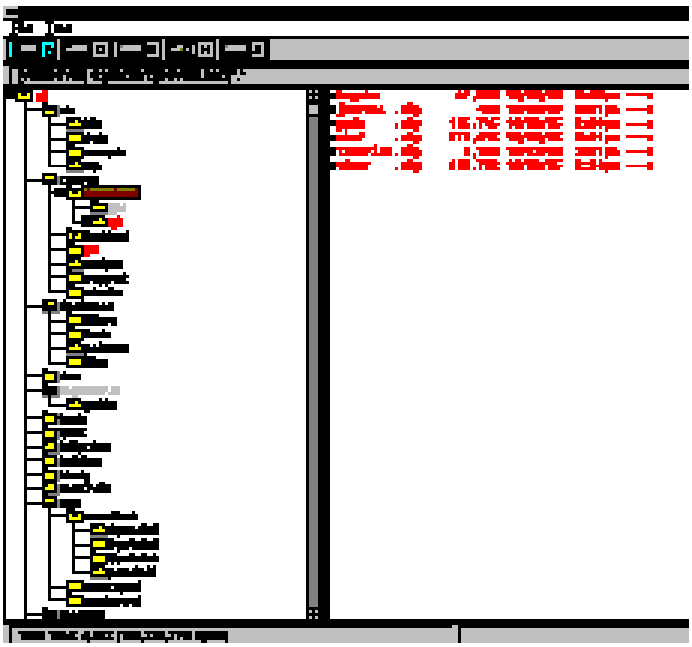



***Microsoft Backup's simple interface.***

With the *Backup* button on the top of the screen highlighted, and the C: drive highlighted in the *Backup From:* box, click on the *Select Files...* button. The screen that follows (see below) is similar in appearance to File Manager. The directory structure appears on the left and the files contained therein on the right. To select a directory to back up, simply double-click on its name—not on its little folder icon. The color of the name changes to red and a small square box appears to the left of its icon when the directory is selected. You can also exclude individual files by clicking on the righthand display.

When you are finished specifying the files you want to back up, click on the *OK* button. You are returned to the previous screen with the estimated number of diskettes you will need and the amount of time it will take. Before clicking on the *Start Backup* button, make sure you've specified the type of backup you want in the lower left. If this is your first backup, the type specified should be "Full" rather than incremental or differential. When you do this again tomorrow, you can change the backup type to incremental but leave everything else the same.

Now that you know how easy it is, just do it.



***Selecting files in Microsoft Backup is as easy as using Windows File Manager.***

# Windows 95: New version, same old security concerns

*by Kevin Haney*

As the hype surrounding Microsoft's August introduction of Windows 95 has abated over the last few months, users, support staff, and network administrators have begun to discover what Windows 95 really offers—and what it lacks—as a desktop operating system. Particularly when a Windows 95 system is hooked up to a local area network, security arises as an important concern. Unfortunately, with Windows 95, Microsoft lost the opportunity to advance the baseline in the security of desktop operating systems since it offers almost no security enhancements over Windows 3.1. Instead, Microsoft advises anyone who needs greater security to buy Windows NT, their more advanced operating system. For some users, however, NT may not be a realistic option, either because of inadequate system resources, hardware or software incompatibilities, or other reasons.

## Weak by design

Windows 95 does provide an improved user interface, 32-bit operation with greater stability, and numerous other enhancements, but it lacks basic security features found in Windows NT and other advanced operating systems. For instance, NT has security certified at the Department of Defense's C-2 level, which mandates discretionary access control (where file access rights can be specified if needed), object reuse (where memory and disk space are erased when no longer needed so that no information is later retrievable), advanced user identification and authentication, and auditing capabilities. Windows 95 possesses only rudimentary access control and identification—it does not support object reuse or have any auditing capabilities at all. Windows NT provides file-level security with a secure file system (NTFS) and secure user profiles to control access to the desktop, applications, and system configuration files; Windows 95 does not. Also, applications under Windows 95 are not provided with a separate security space in which to run, so every multitasking program has, by default, unrestricted access to the system as does the user.

In a networked environment, share-level and user-level security let users share their printer, hard drive, or specified directories with other users on the network. Share-level security lets you password-protect a drive or directory. Whomever you give the password to—or whomever can guess it—can access your files (see the last issue of this column for guidelines on choosing strong passwords). User-level security, on the other hand, means that you assign access permissions only to certain network users or groups with predefined accounts on your network server, without them having to know a secret password. Both types of security are available in Windows 95—you can choose one or the other based on your particular needs. Of course, if improperly configured, these types of access can leave your whole system open to tampering. For instance, selecting a too-easily guessed password or a mistake in assigning permissions can let anyone at all access your system and data. Windows 95 also provides for remote network access over a direct network link or phone lines. This option must be carefully configured to avoid creating security holes.

## Specific problems

All operating systems, due to their extreme complexity, contain potential security holes and bugs (both known and unknown) that affect security. Among the security problems so far reported for Windows 95 are the following:

***The bottom line: You can't depend on Win95's built-in security to protect sensitive information.***

*No boot-up protection*—Windows 95 uses the timeworn and inherently insecure FAT file system (the same one introduced with early versions of DOS). Since it doesn't support NTFS or any other secure file system, anyone with physical access to the system can boot from a DOS diskette and have complete access to the hard drive and all files. This situation can be somewhat mitigated by using the hardware feature of most current systems that disallows booting from diskette drive. Of course, with the proper software, this feature can itself be subverted.

*No incorrect password lockout and audit trail*—You cannot set up Windows 95 to lock out someone after a predetermined number of incorrect passwords have been entered (this feature was added to Window NT only in its latest version). This allows a hacker unlimited chances to guess your password. What's more, there's no audit log to indicate that this kind of activity ever took place.

*Logon security can be circumvented*—The initial Windows 95 login box can easily be circumvented just by pressing Escape. Anyone can then gain full access to the desktop and all of the files on the system. You can use the Registry Editor (which lets you change many system-level settings) to make Windows 95 validate all logons against a server, but any intruder with physical access could boot up Windows 95 in safe mode, rerun the Registry Editor, and again allow Escape to bypass the login check.

*File and printer sharing driver update needed*—If you have enabled file and printer sharing and also enabled remote system administration or installed Microsoft's Remote Registry Services, you need to update certain system drivers. The original drivers contain a bug that allows another user on the network to gain read-only access to your system after the administrator has logged off, until you reboot your computer. The updated drivers (for the English language version only) are available for downloading on the World Wide Web at **http://www.microsoft.com/windows.** They are also available in the Windows 95 section of PUBnet at **http://pubnet.nih.gov/PC/MICROSOFT/peropsys/win95.htm.**

*Lack of Exchange password for Microsoft Mail post offices*—The Exchange mail client supplied with Windows 95 has a bug that does not let it provide password protection for Microsoft Mail users. Although the user creates and enters a password, upon rebooting, the Exchange client gives access to mail no matter what password is entered. Microsoft has not said if it will produce a patch for this problem, and suggests that users create a new password each time they log in.

*Password cache vulnerability*—It was recently reported that the password caching scheme Windows 95 uses to store passwords to network resources (a variation of the RC4 encryption algorithm) can be broken, resulting in hackers being able to discover network and email passwords. A fix for this problem is now available on Microsoft's WWW site at **http://www.microsoft.com/windows/software/mspwlupd.htm**, or on PUBnet at **http://pubnet.nih.gov/PC/MICROSOFT/peropsys/upgrades/mspwlupd.htm**.

**Email**

When attaching documents to email messages bound for Microsoft Mail users, you'll do the recipient a favor by retaining the document's default extension, such as DOC for Word files. That way they'll be able to launch the application and open the file just by double-clicking the attachment instead of having to save the attachment and start the application to open it.

## Vulnerability to viruses

Unfortunately, Windows 95 is as susceptible to computer viruses as Windows 3.1. Indeed, the various viruses written to attack Windows 3.1 systems can very easily be modified to attack Windows 95 systems as well, and the thousands of existing DOS viruses can do damage to a Windows 95 system. One of the biggest security problems Windows 95 users will face is that their tried-and-true Windows 3.x antivirus programs will no longer function correctly. Windows 95 itself does not come with any virus protection. Like NT, Windows 95 prevents direct access to the system hardware for stability reasons; most antivirus programs expect direct access and cannot operate correctly without it. Fortunately, most of the major antivirus vendors have come out with Windows 95 versions of their products. Norton, Dr. Solomon's, McAfee, and Thunderbyte all now have updated versions that provide full virus protection under Windows 95, with memory-resident monitoring and prescheduled scanning available. If you own one of these products, you should get the Windows 95 upgrade immediately. Unfortunately, F-PROT, the DOS-based antivirus program site licensed for NIH by DCRT, is not yet Windows 95-capable. Although it will detect most viruses while running in a DOS box, it cannot remove them. DCRT is now looking at Windows 95 antivirus programs and will soon publish the results of those evaluations.

Many of the holes in Windows 95 security will eventually be filled by third-party security programs such as those available for Windows 3.1. Although there are currently few such programs available for Windows 95, companies such as PC Dynamics, Kent-Marsh, and AXENT Technologies are working on them. For the time being, the Windows 95 user would be well advised not to depend on the built-in security for the protection of sensitive information.

# Find Mac files fast

*by Charles Mokotoff*

Anyone who has surfed the World Wide Web for even a few moments is sure to have come upon a page with a fill-out form to search the site. This type of service is now available on PUBnet, allowing users to easily search for Macintosh software.

To see the search engine in action, point your browser to the PUBnet Mac software page (**http://Pubnet-mac.nih.gov/MAC/Mac_SW.html**) and try it out. Clicking on the search button will allow you to enter a query to find instances of any text you input. For example, inputting "Apple" as the search criteria led me to a page with 15 hypertext links. Glancing at the titles of the pages, I can get closer to what I am looking for, and clicking on any link leads me to the page where I can download the software I want. The more specific you are about what you are searching for, the faster and more appropriate the data will be that is returned.

Prior to the inclusion of this engine, users looking for information on the WWW PUBnet site would need to browse through a table of contents and probably make quite a few wrong turns before heading in the direction of the file they were seeking. This implementation has vastly improved our ability to provide timely and appropriate software and updates to users of PUBnet.

By default, this engine will retrieve instances of your search parameters using relevance ranking (similar to WAIS) or context. Unless you want to see every single instance of the entered word (including many that will have no significance to your search), leave it on Relevance Find.

As PUBnet grows, savvy users may want to indicate exactly which page they would like to search, which will produce faster results. For the time being, just leave the final menu on All_Digests to search the entire collection of Macintosh software.

If you have any questions or comments regarding this search engine or PUBnet Macintosh software in general, send email to **comments@bessie.dcrt.nih.gov**.

(**Store,** *continued from page 1)*

display window. You can browse products, compare prices, get three competitive quotes, and prepare a worksheet listing the specifics of what you want to buy (item number, price, etc.), but you cannot buy anything. That is, the actual procurement process has not been changed or simplified—as yet. The store's architects hope that before long, the Electronic Computer Store will not only allow you to window-shop but to make the actual purchase too.

In the meantime, the new system does offer some tangible benefits. The contract will help simplify procurement procedures while providing the government with current competitive prices. It will also allow NIH to establish more accountability in the acquisition process. Procurement officials expect to periodically review vendor performance in such areas as delivery times and customer service.

I would remind potential buyers, however, that a little bit of knowledge can be dangerous. To draw an analogy: If you saw a pair of beautiful boots on sale, would you buy them even if you didn't know what size they were? Not likely. Unfortunately, you may find yourself in a similar position when browsing systems and options in the Electronic Computer Store. Product information on many of the home pages is sketchy at best. Although a hard disk may be clearly stated as 500MB, the type (IDE, EIDE, SCSI) may not be mentioned at all. Is a monitor, keyboard, or mouse included with a system? What type of bus does the system have? Is the RAM upgradable? Does it have a hardware cache? An option for a tape drive? Computer equipment is far too costly to gloss over seemingly small details until the system arrives and is not what you expected. Before choosing a system then, make sure you have all the answers. For help in understanding the differences in system options *before* you place an order, feel free to call DCRT at 4-DCRT and ask to talk to a specialist.

## Take it for a spin

If you have a PC, Internet access, and a graphical browser, have a look at the Electronic Computer Store home page yourself. Its URL is **http://www.nih.gov:80/od/oirm/nihecs.html**. Fair warning: In my testing on Jan. 22, I found that four of the vendors were not yet active from the OIRM home page. Of the remaining vendors, some required you to enter personal information before granting access to their online catalog. I also encountered numerous errors, unformatted product specifications that were hard to interpret even when they were readable, and was disappointed in the lack of overall structure of the various vendors. Clearly each vendor is competing in another way: in how its merchandise is visually presented in its online catalog.

Though obviously still in its embryonic stages, the NIH Electronic Computer Store is a forward-looking idea that holds great promise for streamlining the procurement process at NIH. Expect it to become more polished and functional as it matures.

***OIRM's NIH Electronic Computer Store home page.***

(**DSB,** *continued from page 1)*

sophisticated, and as DCRT expanded its services to match, the Network Systems Branch was formed to focus on local and wide area networking, followed shortly by the Customer Services Branch, which provided a central point of contact for all DCRT support and services.

With all NIH organizations under increasing pressure to identify and remove overlap, and as a result of consensus developed in our own streamlining retreats, DCRT decided that it was in the best interests of DCRT and the user community to distribute the DSB services to other branches. In October 1995, the staff and functions of the Distributed Systems Branch were transferred to other DCRT components.

Specifically, all networking services were moved to the Network Systems Branch, database-related services were moved to the Information Systems Branch; and PC and Macintosh support and NIH user group coordination were moved to the Customer Services Branch.

The former staff of the PCB/DSB continue in their role of supporting distributed computing at NIH, only now in a streamlined, more efficient and effective organizational structure.

A core of technical and contract specialists including David Songco, former Chief of the PCB/DSB, are now directing their efforts to provide on-site desktop and LAN support to NIH organizations on a fee-for-service, cost-recovery basis using resources provided by DCRT's Computer Equipment, Resources, and Technology Acquisition (CERTAN), now in progress. The CERTAN contract will be used to hire contract staff to provide on-site support. DCRT staff will provide contract administration, overall coordination, writing of SOW and task descriptions, and system design and planning. DCRT staff will also monitor and coordinate the support functions to ensure compliance with quality and architectural standards.

*(See **DSB,** page 9)*

# DCRT recommends three Web browsers

*by Dale Graham*
*and Keith Trace*
*With thanks to Ginny Vinton, Jenny Riewerts, and Scott Collins*

DCRT's Electronic Information Dissemination Project has made a recommendation regarding browser programs to be used on the NIH campus. The recommendation was based on the following considerations:

- Any recommended browser must be "cross-platform"—that is, support Windows, Macintosh, and Unix systems.
- Any recommended browser must support HTML at least up through table tags.
- Both commercial and freeware options are to be recommended.

In the course of these considerations, no single-platform browser was found to be superior to any of the cross-platform products. Our browser recommendations are these:

Free: ***NCSA Mosaic***
Commercial: ***Netscape Navigator***
Licensed: ***OnNet's Spyglass Mosaic***

Please note that DCRT recommends and supports the current *release* version of these products. *We do not support beta versions of any browser.*

## NCSA Mosaic

The current release version of Mosaic is 2.+. This version is speedier than previous versions, and supports tables and other advanced HTML tags. While the Windows and Mac versions have some differences between them, they are both "table-aware" and support text justification, among other features.

Mac users have a choice of 68k or PPC versions of Mosaic. Mosaic for Windows is available only in 32-bit versions designed for Windows 95 and NT. To make it work under Windows for Workgroups, which is a 16-bit system, you will need Microsoft's TCP/IP stack and Win32s. Alternatively, you can use Spyglass Mosaic, a 16-bit browser described below.

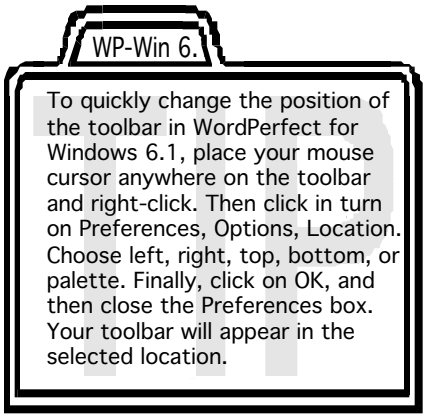
NCSA Mosaic for the Mac can be found at NIH's WWW PUBnet site **http://Pubnet-mac.nih.gov/Mac/browsers.html.** If you don't have a browser, log on to PUBnet as a guest using Appleshare. Browsers can be found in Internet software/WWW Browsers.

Mosaic for Windows can likewise be found at PUBnet's Web site **http://pubnet.nih.gov/PC/TCPIP/.** Windows NT and 95 users with Microsoft Network clients can also use File Manager to connect a drive to \\PUBSERVER\PUBNET. Netware clients can similarly map a drive to NIH-PUBSERVER\PUBNET:. The user name is guest and there is no password. Or you can FTP to **pubnet.nih.gov**. Once connected, Mosaic browsers can be found in:

PC\TCPIP\supp\Browser\MOSAIC

There are separate subdirectories for NT, WFW, and Windows 95. Copy the appropriate file into a temporary directory on your computer and then execute that file to extract the installation program. Then run SETUP.EXE to install Mosaic.

If you have Windows for Workgroups, you'll need the Microsoft 32-bit API, WIN32s, before installing Mosaic. You can get WIN32s from PUBnet in this location: \PC\MICROS~1\PEROPSYS\Windows\win32s\. The file is WIN32S.EXE. Copy the file into a temporary directory on your computer and then execute it to extract the installation program. Then run SETUP.EXE to install the 32-bit API.




## Netscape

The current release version of Netscape is 1.1+, although version numbers vary somewhat from platform to platform. Try to ensure that you have the latest one for your computer.

Macintosh users need just the Netscape Installer, which will automatically install the correct version. Windows users have the choice of 16- or 32-bit versions of Netscape.

You may obtain a copy of Netscape 1.1N (the unregistered version) at Netscape's ftp site **ftp7.netscape.com**, but bear in mind that Netscape is a commercial program and that licenses to upgrade your unregistered copies must be obtained.

The following companies can sell you licensed Netscape software: Haven and Company (301-384-3996; BPA #00030451); BTG (1-800-899-6200 or 703-714-7000; Electronic Computer Store contract #263-95-D-0322; http://www.btg.com/Netscape/welcome.html); GTSI (http://www.gtsi.com/).

Each copy of Netscape individually costs $39. You may also buy discounted 10–99 packs, mixing and matching PC, Mac, and Unix versions. These prices are discounted into the $23 range per copy. Note that the forthcoming Netscape 2 will be $49, and Netscape Navigator Gold, to include a built-in HTML editor, will be $79. Unfortunately, Netscape is not offering site licenses as an option to government sites.

## Spyglass Mosaic

Spyglass Mosaic, a 16-bit browser, is part of FTP Software's OnNet product, which is supplied by DCRT. The current release version of Spyglass Mosaic is 2. Those on NIHnet-connected LANs can get a licensed copy of OnNet from DCRT through their Technical LAN Coordinator. If you are not sure who your TLC is, call TASC at 4-DCRT. PARACHUTE users who need OnNet should contact TASC. Besides Mosaic, OnNet includes the FTP TCP/IP stack and other networking applications.

# A PowerMac survival guide

*by Sandy Desautels*

Perhaps you're one of the fortunate few who has recently received a new-generation Macintosh but you're not feeling very fortunate. Is your PowerMac crashing, freezing, or generally making your life miserable? If so, take a deep breath and try to relax; you're not alone. Every time technology is pushed to a new level, incompatibilities and software bugs are bound to occur. The purpose of this article is to give you some helpful advice to eliminate your problems (at least most of them).

## Compatibility issues

Many people have reported major problems running any Microsoft Office application. There are two steps to take to eliminate your Office woes:

1. Do not use Office Manager (the little icon and pulldown menu that appear on the right side of the menu bar), which is part of the typical installation of Office. If Office Manager is running on your machine, remove it. Be sure you go through the Setup program to deinstall Office Manager rather than just deleting the files, or you may run into more problems later on.

Microsoft has just released a patch to the Office Manager program, available on PUBnet. If you simply can't live without Office Manager, you might try the patch, but we can't guarantee the results.

2. Install the Microsoft Office Fix extension. It can be found on PUBnet in the Updates/Patches section. Anyone using Microsoft Office on a PowerMac should install this fix, not just those with the new PCI Macs.

Apple's 7.5.2 Printer Update 1.1, also available on PUBnet, fixes printing problems with PowerMacs. Without these fixes, your computer may freeze or never complete printing, and it may be necessary to restart your computer or cancel print jobs. Follow the instructions on the Read Me file included with the Update to install it.

## Open Transport

The biggest change in the new PowerMacs, which run System 7.5.2, is a new networking subsystem called Open Transport. This is a complete rewrite of all components of the networking section of the operating system. Open Transport has great promise in that it eliminates the key problems that have hampered the Macintosh as a major force on the Internet. It is faster and easier to use than MacTCP, the implementation of the TCP/IP protocol on all Macs until now.

Because Open Transport is so different, users have had problems with some of the older networking and dial-up software available today. Although connecting PowerMacs to the network has been relatively easy, some Internet applications do not work properly. In some cases, these problems have been reported to the manufacturer or person responsible for the software and new versions or fixes have been made available. Moreover, since Open Transport started shipping in June, Apple has released newer versions of the software to eliminate bugs reported by users. Many of the problems that may be occurring on your machine could be solved simply by upgrading to the latest version of Open Transport. As of this writing, it's version 1.0.8.

To see which version of the program you are using:

1. Select TCP/IP in Control Panels.
2. Select the Mode command in the Edit menu.
3. Select Advanced Mode; click okay.
4. Click the Info button at the bottom, left-hand side of the dialog box.

If you have a Macintosh 9500, it's possible you have version 1.0. Otherwise, you probably have 1.0.6. For those with version 1.0, there are two upgrades required. Anyone using version 1.0.6 or 1.0.7 needs only the second upgrade.

To upgrade from 1.0 to 1.0.6, connect to PUBnet thru the Chooser. In the System 7 Installs & Updates folder, open the 7200/7500/8500/9500 folder. Open the 7.5.2 Install for 9500 folder and run the installer. You should perform a clean install. Call the TASC Help Desk if you don't know how to do this.

To upgrade from 1.0.6/1.0.7 to 1.0.8, connect to PUBnet through the Chooser. In the System 7 Installs & Updates folder, open the 7200/7500/8500/9500 folder. Open the Open Transport 1.0.8 folder and run the installer program. Restart.

Apple is currently working on version 1.1 of Open Transport, which will be able to run on all Macintoshes with System 7.5. This version is currently in beta testing and should be released by the time you read this.

## 7200/90, PCI Mac owners

Apple recently released information about an Ethernet networking problem on some 7200/90 computers. If you have one, please refer to the following Web page:

**http://www.macintouch.com/~ricford/7200problems.html**

This page gives you step-by-step instructions to determine if your machine has a hardware problem and, if so, how to go about getting a new logic board from Apple.

For more information about the new PCI Macs, visit our Web site at:

**http://mantis.dcrt.nih.gov/dsb/Mac/Open_Transport.html**

These pages give more detail on how to set up the TCP/IP Control Panel for use at work or for access through AppleTalk Remote Access. There is also more information about specific software incompatibilities and any upgrades that are available.

If you take the steps outlined above, your new Macintosh will become the productive tool you've been looking for and make you the envy of all your friends.

# Get that Macintosh mail under control!

*by Dale Graham*

Once you've started using electronic mail, it's hard to imagine living without it. The more you use this handy tool, however, the more critical mail management becomes as you find yourself overwhelmed by a flood of email messages. Here are some recommendations to facilitate your use of email.

### *Use a mail program that offers "automatic filtering."*

Some mail programs are capable of automatically putting messages into different mailboxes, depending on the sender's name, text found in the subject line, or other items in the header, body of the message, etc. This allows you to separate critical messages—say those from your boss—from less important ones. I have found this aspect of mail management so useful that I will no longer even consider a mail package unless it includes automatic filtering.

For the Macintosh, the best choice is the commercial version of Eudora, which is site licensed for NIH users. Try it, you'll love it! Eudora does require that you get a POP account. For more information about Eudora, send a request for information to **4dcrt@nih.gov** or call 4-DCRT. Be sure to indicate you want information on the Macintosh version of Eudora, since there is also a PC version.

**Mac**

The Feb issue of MacWorld has an excellent two-page article titled "Secrets of the Find File Command," which is a must-read for anyone who aspires to be a Mac super user. My favorite tip is the shortcut to create an alias from a found item by holding down the Command key as you drag the item to the desktop from the Found Items window. You can read it on the Web at http://www.macworld.com. Click search to find the path to back issues

### *Get a "mail database" program.*

Ever lose a vital mail message or spend a lot of time looking for one? You know, a message whose subject line bears no relation to its contents or whose sender's email address is one of those less-than-memorable NIH aliases? Well, a handy little mail database that can be used to store interesting mail messages could be just what you need.

For the Macintosh, there is a program called MailKeeper, produced by Nisus Software, that is immensely useful. This program intelligently "parses" whatever you send to it, pulling out email addresses, names, and even URLs. Automatic categorization is also employed by this program, but you can help it out by some additional manual categorization if need be. The search mechanism is quick and powerful. The interface still leaves something to be desired (it will take a small amount of persistence for you to get the hang of it), but MailKeeper is actually quite easy to use once you're accustomed to it. The program is only $35, and a demo version is available on PUBnet at: **http://pubnet-mac.nih.gov/MAC/Misc_Internet/MailKeeperDemo.hqx.**

### *Get a superuser mail program.*

This is a program that will handle multiple mail accounts and provide some extra bells and whistles as well. For example, a new Macintosh program, Claris Em@iler, will track a variety of different mail programs, automatically logging on and getting mail from different accounts, logging off as soon as the mail is downloaded, and so on. We have been evaluating this program for all of about four hours at the time of this writing. Not only would it be very useful for people who are logging onto different commercial services (AOL, CompuServe, Prodigy) and want a central repository for messages, but it could also be extremely useful to the NIH community. This program offers automatic filtering and imports address books from other mail programs. Better yet, it can selectively generate automatic replies. For example, if I were going to be out of touch for a while, I could instruct the program to send a reply to that effect to all messages from someone with a "dcrt.nih.gov" extension, ensuring that the folks I work with would know I had a good reason for not replying. Used in conjunction with Internet Config (a free program), in an Em@iler message you can select an ftp URL or http URL, and command-clicking will result in either ftp transfer of the file or your browser's opening to that URL. *Very* neat! Alternatively, you can drag a URL from an Em@iler message to a browser window, and the browser will attempt to get there. Downsides? It unfortunately does not support Microsoft Mail accounts, which use a proprietary format. It also cannot access PH from within the program (which happens to be a built-in function of Eudora). Claris Em@iler costs about $70 from mail order supply houses.

*(**DSB,** continued from page 6)*

DCRT will develop a Service Level agreement with each NIH group. Groups may contract for three levels of service: Infrastructure, Server, and Desktop.

Infrastructure includes system design, administration, installation and problem resolution for LAN wiring, router connections, hubs, and associated electronics.

Server includes system design, administration, installation and problem resolution for server hardware, network operating systems, email, print queues, shared file services, server-based applications, and server data backup.

Desktop support includes system design, administration, and installation and problem resolution for all shrink-wrapped applications running on PCs and Macs.

For more information about this new DCRT service, contact David Songco at 496-9814 or send email to **songco@nih.gov**.

# Adobe PageMill 1.0: HTML for the masses?

*by Charles Mokotoff*

Anyone who has worked with HyperText Markup Language, the language of the World Wide Web, will attest that the process is tedious and time-consuming. Despite the truly high technology of the World Wide Web itself, the manner of composing documents is old-fashioned and arcane. (For the uninitiated, HTML is a manner of adding tags, for example:  this is bold text, to existing text documents to render them readable on the WWW).

PageMill 1.0, a new HTML authoring tool by Adobe Systems, has laid the groundwork for changing the way we prepare documents for publishing on the Web. This program, currently available only for the Macintosh, has rightly been dubbed the "PageMaker of the 90s," and indeed, it has a look and feel very similar to the well-known page-layout program responsible for ushering in the great desktop publishing revolution of the early 80s. Adobe's claim is that PageMill has done away with the need to learn HTML and enables anyone capable of using a Mac to prepare World Wide Web documents. In my opinion, glaring omissions and outright bugs keep PageMill from living up to expectations. If you have no knowledge of HTML, chances are you won't get very far using this type of editor as your only tool, nor is it likely to change the work habits of experienced HTML authors.

## More natural HTML

Although you can see everything as it will appear in PageMill, documents are actually just text files that can be opened by any text editor or word processor and edited in the traditional manner. So instead of seeing:

<H3>This is heading 3</H3>

you will see just the text more or less as it would be displayed in a browser such as Netscape or Mosaic, thus eliminating the need to be continually cycling between your HTML authoring program and a browser to check your progress. Thanks to the superb graphics handling of PageMill, you will not need to look at, for example, an ugly text string such as:

http://Pubnet-mac.nih.gov/GIFs/WIGlogo.gif.

You would instead see just the graphic, which can be resized proportionally exactly as in any other Macintosh drawing program. In addition, the actual pixel sizes are placed in the code, and alternate text (for those using non-graphical browsers) is easy to insert.

Graphics can be placed on a page in a number of ways. Undoubtedly the slickest feature of PageMill is the use of drag and drop. One can drag an image out of an application such as Adobe PhotoShop or the Scrapbook desk accessory directly onto the PageMill document. PageMill supports both JPEG and GIF formats, and any of these files can also be dragged out of a directory in the Finder and placed on the page. The images can also be easily made transparent and interlaced from within the program's graphic editor. For anyone who has struggled with typing in image source locations and troubleshooting bad links, this is a dream come true. Image maps are also implemented in a similar, easy-to-use fashion. This type of interface is extremely conducive to the flow of creativity and is just what you would expect from a well-designed Macintosh program.

## The catch

As amazing as the graphics features such as resizing, automatic backgrounds, and drag-and-drop capabilities are, they are poor compensation for the problems this program displays in text handling. Lack of a search-and-replace command and PageMill's propensity for writing incorrect HTML likewise severely dampen my enthusiasm for the application.

Possibly the worst aspect of this program is its nasty habit of rewriting HTML code from an existing file. To be fair, this problem occurs in all the editors we have tested so far that have similar functionality.

As an experiment, I designed a Web page from scratch with several links, graphics, and assorted text formatting options. I was very happy with the way it appeared on the page and the way it worked in Netscape. All links were correct (and effortless to construct), resized graphics looked great, and text appeared as I would have expected. However, when I viewed the HTML code in a text editor, I was surprised to see numerous HTML syntax errors—for example, two break tags (<BR>) when one paragraph tag (<P>) would do, and heading tags (<H2>) without the corresponding end tag (</H2>). The errors didn't cause problems in Netscape, which is notoriously tolerant of badly formed HTML, but all indications are that HTML will continue to become more standardized, adhering to strict principles in order that all browsing software will display code uniformly. PageMill, at least in this version, is not playing by the rules.

In conclusion, I do heartily recommend PageMill, but I suggest you use it with care. I have found that doing highly graphical pages is much simpler than using a straight text editor and lends itself well to the creative process. Doing a group of pages with internal links is a joy thanks to the drag-and-drop link formation. Unfortunately, one will have to continually consult a text version of the pages to be sure syntax is proper.

All in all, I consider PageMill a large step in the right direction. I hope the next version will fully support tables (this one does not) and have expanded text editing capabilities in order to bring us full-fledged into a new era of Internet publishing.

For information on PageMill, see

**http://www.adobe.com/Apps/PageMill/**

PageMill 1.0 is available from most Mac software vendors for $99.

# Ask TASC — Technical Assistance and Support Center

*by Jenny Riewerts*


**"...EUDORA...CANDYLAN... DOCUMENTATION...DIRECTORY SERVICE..."**

*The following questions were taken from actual calls to TASC, the DCRT help desk.*

### ☎ I want to install Eudora on my PC. I downloaded it from PUBnet, but how do I configure it?

DCRT has a pamphlet detailing this process for POP and Helix accounts, but the simple steps are as follows. Double-click on your Eudora icon. Press *Cancel* when it prompts you to enter your password. Choose *Special* and then *Configuration*. In the POP Account field, enter your account information—*<username>@helix.nih.gov* for Helix, *<username>@POserver-<firstletter>.nih.gov* for POP. (Note: The field will say POP Account even if you have a Helix account. This is Eudora's wording.) Enter your name in the Real Name field. Leave the Winsock prompt defaulted, unless you use another connection method. For the SMTP Server, enter *helix.nih.gov* if you have a Helix account or *POserver-<firstletter>.nih.gov* if you have a POP account. Enter your Return Address: *<username>@helix.nih.gov* for Helix, *<username>@Box-firstletter>.nih.gov* for POP. Select the number of minutes you wish to wait between checks for mail. In the Ph Server field, enter *ph.nih.gov*. Everything else can stay defaulted unless you wish to change it. The final selection is the Attachment Directory. If you enter a directory in this field, all attachments sent to you will be automatically converted from their encoding and saved in this directory—an incredibly helpful feature.

### ☎ WHAT is CandyLan and how can I get access to it?

CandyLan, the Campus Network Distribution System, is an NT server on the NIH backbone network. It provides access to ADP software available through NIH site licenses or purchasing agreements. Your TLC will need to contact 4-DCRT to gain access to the server. Contact your TLC if there is specific software you need.

### ☎ I want information about the Parachute beta program. How can I find the information and apply for the service?

Information on Parachute is available on the World Wide Web at **http://parachute.dcrt.nih.gov/Parachute.html**. You may apply for a Parachute account by filling out the form through this home page. You do not need a forms-capable browser to do so (even Lynx on the Helix system will do), but you will need a DCRT account.

### ☎ I need to order some documentation, but I'm not sure who to ask. Do I just call 4-DCRT?

Of course, you can always call 4-DCRT; however, there is an easier and possibly more convenient way to order documentation and subscribe to publications: through the Pubware server, accessible through both Wylbur and Helix. In Helix, at the "helix%" prompt, type *PUBWARE*. In Wylbur, at the "?" prompt, type *ENTER PUBWARE*. You will be taken to a menu where you can view general information about Pubware, place an order for documentation, subscribe to or renew a publication, or cancel a pending order. There is also a nice feature that allows you to profile specific documentation to see if it is what you need before you order it. Once you have generated your order online, the documentation will be sent to you through NIH mail.

### ☎ HOW do I update my email address in the Directory Service? How do I change it?

The Directory Service keeps a list of everyone's *preferred* email address, that is, the email address you use most often and want others to know. When you are assigned an email address, either with a Helix or Wylbur account, or with MSMail, your address is submitted to the Directory Service. You need to choose which address you want listed as your "main" address. Once you have an address submitted, either by an account sponsor or a mail administrator, you will receive a form to update the NIH Directory Campaign. If you reply to it, you will set your Directory Service listing to that email address. Please be sure that if you do not want to use that mail address as your *preferred* address, do not respond to the change form! You can just delete it.

If the Directory Service is currently showing an address that you want to change, send email to **change@nih.gov.** Don't put anything in the subject or the body of the message. You will get a form back that lists your entire Directory Service entry. One of the fields available is "email address." Put your *preferred* address in this field and send the form back. It may take a little while for the Service listing to be updated, but you can check it by performing a lookup or inquiring in the ph server.

To perform a lookup, send email to **lookup@nih.gov** with your query in the subject line. Your query can be any part of your name (or anyone else's you may be looking up). You will get back a message containing all the address listings that match your query.

To inquire through Gopher, start at the top level and choose the Email and Directory Services menu. Then choose NIH Directory Service and input the name to query on.

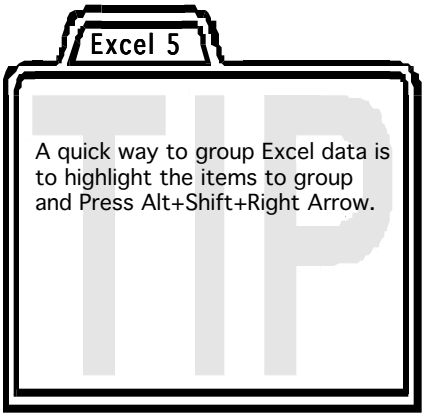
# Mac Web server site license

*by Sandy Desautels*

DCRT recently received an NIH site license for WebStar, software required to run a World Wide Web server from a Macintosh. WebStar replaces MacHTTP.

Two things are required to use WebStar: the software itself and a serial number to activate it. The software is available on PUBnet at **http://pubnet-mac.nih.gov/MAC/WebStar.html**. To obtain a serial number, read the information at **http://pubnet-mac.nih.gov/Macs_WWW/Intro.html** and fill out the form you'll find there. A serial number will be assigned to you after the form has been successfully submitted.

*Important note: Approval by a section chief or branch chief is required before any new Web site can be set up at NIH. Please be sure your pages are approved before submitting a request for a WebStar serial number.*




# TASC extends its help desk hours

As of Jan. 1, 1996, DCRT's Technical Assistance and Support Center has extended its hours of operation. We now answer help desk calls from 8:30 a.m. until 4:30 p.m., Monday through Friday. Please be aware that you can still leave a message on voice mail, send email, or fax us anytime day or night! Our fax number is 402-7349, and our phone number is 594-DCRT (3278).

# Computing and networking guide

*by Star Kline*

What software does DCRT support? How do I contact the help desk? What special interest groups does DCRT sponsor? Which scientific databases are accessible on the Web? How do I get a copy of NIH Image? What does the acronym PARACHUTE really mean?

The answers to these and many other questions can be found in "Computing and Networking Resources of DCRT." This guide provides an overview of the wide range of computing and networking resources available to you.

To get a copy, send an email request to **4DCRT@nih.gov** or call us at 4-DCRT. And be sure to check the Web version available at **http://tmp.dcrt.nih.gov/dcrt/cr** for the latest updates!

# Numbers to know

**DCRT**

| | |
|---|---|
| **Technical Assistance and Support Center (TASC)** | **(59)4-DCRT (3278)** |
| FAX | (40)2-7349 |
| TDD | (49)6-8294 |
| Email | 4DCRT@NIH.GOV |

*Providing support for: PC, Macintosh, LAN, Customer Accounts, MVS Mainframe, Scientific Computing Resource Center, Statistical Software, Technical Information Office, Training Program, User Groups (BRMUG, Computer Support Coordinators, CURE/TLC, WUG)*

| | |
|---|---|
| Administrative Database (ADB) | (49)6-6256 |
| Advanced Lab. Workstation (ALW) | (49)6-UNIX |
| Helix | (49)6-4823 |
| Information Office | (49)6-6203 |
| Intel Highly Parallel Supercomputer | (49)6-1111 |
| NIHnet | (40)2-3140 |
| VMS | (301)210-3505 |

**NIH and other**

| | |
|---|---|
| BEIP Computer Repair | (49)6-4131 |
| Dell Technical Support | 1-800-274-1140 |
| Div. of Workforce Development | (49)6-6211 |
| IBM Technical Support | 1-800-772-2227 |
| NIH User Resource Center Bldg. 31 | (49)6-5025 |
| NIH User Resource Center EPS | (40)2-4722 |

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**Please contact the TASC Help Desk with address corrections**